

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): An Internet Protocol (IP) router including an IP routing table which stores routing information for connecting a plurality of client devices with an original server which is at least an origin of supplying a content and with a plurality of mirror servers into which the content supplied from the original server is copied, and an IP routing function which performs an IP routing of a received packet according to the IP routing table, the IP router comprising:

means for ending a connection relating to a packet output from a specific port of a client device and obtaining request information of a content requested by the client device;

means for confirming whether the plurality of mirror servers of the original server exists corresponding to the obtained request information;

means for selecting, if the plurality of mirror servers exists, an optimum server, from among the mirror servers, for the request information based on information which is to be an index for selecting an optimum server if the obtained request information corresponds to the plurality of mirror servers, and based on the routing information;

means for obtaining the content by connecting with the selected optimum server via a server side interface of the IP router located proximate to the plurality of client devices and via a network which interconnects the original server and the plurality of mirror devices; and

means for transferring the obtained content to the client device; by connecting to the client device via a client side interface of the IP router

means for detecting a change in a network topology based on a change in the IP routing table;

means for altering a selection criteria of the optimum server when the change in the network topology is detected; and

means for altering a band setting for each service class according to a traffic change accompanying an alteration of the selection criteria.

2. (canceled)

3. (previously presented): The IP router, as claimed in claim 1, wherein the information to be an index for selecting the optimum server comprises at least one of: information for driving/stopping state per server, Round-Trip Time (RTT) information, or throughput information.

4. (Original): The IP router, as claimed in claim 1, wherein the means for selecting an optimum server selects the optimum server by additionally considering a past access track record.

5. (previously presented): The IP router, as claimed in claim 1, further comprising: means for detecting a change in the IP routing table and performing a health check for obtaining the index information per server based on the detected change in the IP routing table.

6. (currently amended): The IP router, as claimed in claim-2 1, further comprising: means for monitoring a changing situation of the traffic for a predetermined period of time, which monitoring means is triggered by the detected topology change, wherein the means for altering the band setting alters the band setting for each service class by using a result of monitoring the changing situation of the traffic.

7. (currently amended): A communication system comprising:
a plurality of client devices;
an original server which at least serves as an origin of supplying a content;
a plurality of mirror servers which mirror servers copy and hold the content supplied from the original server; and

~~an Internet Protocol (IP) router located proximate to the plurality of client devices and comprising a client-side interface coupled to the plurality of client devices and a server-side interface, which connects to a network which interconnects the original server and the mirror servers including an Internet protocol (IP) routing table which stores routing information for connecting the plurality of client servers with the original server and with the plurality of mirror servers via a network, and an IP routing function which performs an IP routing of a received packet according to the IP routing table, wherein the IP router includes:~~

~~an Internet Protocol (IP) routing table which stores routing information;~~

~~means for ending a connection relating to a packet output from a specific port of the a client device and obtaining request information of a content requested by the client device;~~

~~means for confirming whether the plurality of mirror servers of the original server exists corresponding to the obtained request information;~~

~~means for identifying the mirror servers comprising the content requested based on the obtained request information and selecting, if the plurality of mirror servers exists, an optimum server, from among the mirror servers, for the request information based on an index-information which is to be an index for selecting an optimum server, and based on the routing information;~~

~~means for obtaining the content by connecting with the optimum server selected; and~~

~~means for transferring the obtained content to the client device;~~

~~means for detecting a change in a network topology based on a change in the IP routing table;~~

~~means for altering a selection criteria of the optimum server when the change in the network topology is detected; and~~

~~means for altering a band setting for each service class according to a traffic change accompanying an alteration of the selection criteria.~~

8. (canceled)

9. (currently amended): The communication system, as claimed in claim 7, wherein the index information which is to be an index for selecting an optimum server comprises at least

one of: information for driving/stopping state per server, Round-Trip Time (RTT) information, or throughput information.

10. (previously presented): The communication system, as claimed in claim 7, wherein the means for selecting the optimum server selects the optimum server by additionally considering a historical access track record.

11. (previously presented): The communication system, as claimed in claim 7, wherein the IP router further comprises:

means for detecting a change in the IP routing table and performing a health check for obtaining the index information per server based on the detected change in the IP routing table.

12. (currently amended): The communication system, as claimed in claim ~~8~~ 7, wherein the IP router further comprises:

means for monitoring a changing situation of the traffic for a predetermined period of time, wherein the means for altering the band setting alters the band setting for each service class according to a result of monitoring the changing situation of the traffic.

13. (currently amended): A band setting method of an Internet Protocol (IP) router ~~for setting a band when~~ including an IP routing table which stores routing information for connecting a plurality of client devices with an original server which at least serves as an origin of supplying a content and with a plurality of mirror servers which copy and hold the content over a network based on routing information of an IP routing table provided in the IP router, into which the content supplied from the original server is copied, and an IP routing function which performs an IP routing of a received packet according to the IP routing table, the band setting method comprising:

ending a connection relating to a packet output from a specific port of ~~the a~~ client device, and obtaining request information of a content requested by the client device;

confirming whether the plurality of mirror servers of the original server exists corresponding to the obtained request information;

~~selecting, if the plurality of mirror servers exists, an optimum server, from among the mirror servers,~~ for the request information based on information which is to be an index for selecting an optimum server ~~if the obtained request information corresponds to the plurality of mirror servers,~~ and based on the routing information;

~~obtaining the content by connecting with the selected optimum server via a client-side interface of the IP router located proximate the plurality of client devices and via the network which interconnects the original server and the plurality of mirror devices;~~

~~transferring the obtained content to the client device by connecting to the client device via a client-side interface of the IP router;~~

~~detecting, from a change in contents of the IP routing table, that a network topology has been changed~~ a change in a network topology based on a change in the IP routing table;

~~altering a selection criteria of the optimum server based on a result of detecting that the network topology has been changed~~ when the change in the network topology is detected; and

~~altering a band setting for each service class according to a traffic change accompanying an alteration of the selection criteria.~~

14. (previously presented): The band setting method, as claimed in claim 13, wherein the information to be an index for selecting an optimum server comprises at least one of: information for driving/stopping state per server, Round-Trip Time (RTT) information, or throughput information.

15. (previously presented): The band setting method, as claimed in claim 13, wherein selecting an optimum server comprises:

selecting the optimum server by additionally considering a historical access track record.

16. (previously presented): The band setting method, as claimed in claim 13, wherein a health check for obtaining information per server, which is to be an index for selecting the optimum server, is performed when a change in the IP routing table is recognized.

17. (previously presented): The band setting method, as claimed in claim 13, further comprising:

monitoring a changing situation of the traffic for a predetermined period of time, and
altering the band setting for each service class according to a result of monitoring the
changing situation of the traffic.

18. (currently amended): A ~~non-transitory tangible recording~~ computer readable storage medium storing software program for setting a band by an Internet Protocol (IP) router which sets a band when connecting a plurality of client devices with an original server which is at least an origin of supplying a content and with a plurality of mirror servers which copy and hold the content over a network based on routing information of an IP routing table provided in the IP router, which software program when executed by a computer of the IP router causes the computer to perform operations comprising:

ending a connection relating to a packet output from a specific port of the client device, and obtaining request information of a content requested by the client device;

confirming whether the plurality of mirror servers of the original server exists
corresponding to the obtained request information;

selecting, if the plurality of mirror servers exists, an optimum server, from among the
mirror servers, for the request information based on information which is to be an index for selecting an optimum server ~~if the obtained request information corresponds to the plurality of mirror servers,~~ and based on the routing information;

~~obtaining the content by connecting with the selected optimum server via a server side interface of the IP router located proximate to the plurality of client devices and via the network which interconnects the original server and the plurality of mirror devices; and~~

~~transferring the obtained content to the client device; by connecting to the client device via a client side interface of the IP router~~

detecting a change in a network topology based on a change in the IP routing table;
altering a selection criteria of the optimum server when the change in the network
topology is detected; and

altering a band setting for each service class according to a traffic change accompanying an alteration of the selection criteria.

19. (canceled)

20. (previously presented): A method comprising at least one of downloading software to a computer, which when executed by the computer causes the computer to perform operations comprising the method of claim 13, or providing software to download to a computer, which when executed by the computer causes the computer to perform operations comprising the method of claim 13.

21. (previously presented): The IP router, as claimed in claim 1, further comprising:
identifying means for identifying the mirror servers comprising the requested content based on the obtained request information; and
server monitoring means for obtaining a Round-Trip Time (RTT) information for the identified mirror servers and providing the obtained RRT information to the means for selecting the optimum server, which selects the optimum server based on the RTT information for the identified mirror servers.